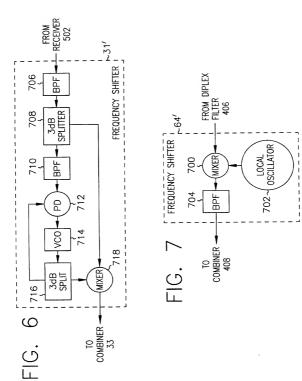
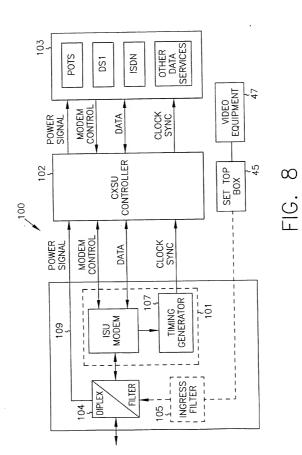
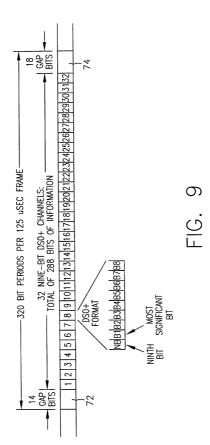
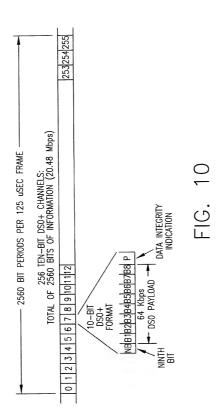


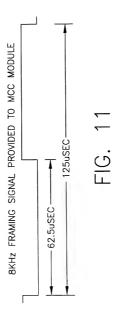
FIG. 5

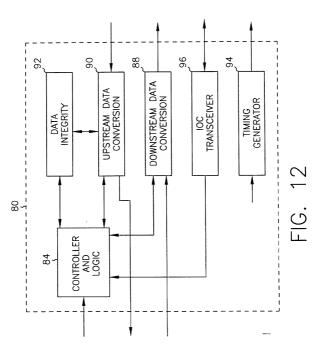












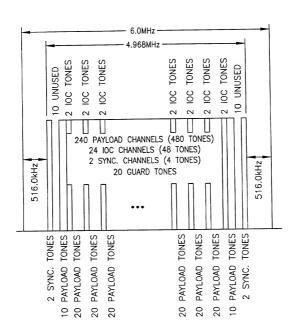
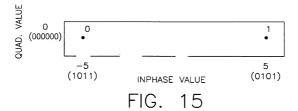


FIG. 13

	OUSED IN RECEIVE ONLY TRANSMIT POINTS						
QUADRATURE VALUE	5 (0101)	10000	10000	10001	10011	10010	10010
		16	16	17	19	18	18
	3 (0011)	10100	11000	11001	11011	11010	11111
		20	24	25	27	26	31
	1 (0001)	11100	01000	01001	01011	01010	11110
		28	8	9	11	10	30
	-1 (1111)	11101	01100	01101	01111	01110	10110
		29	12	13	15	14	22
	-3 (1101)	10101	00100	00101	00111	00110	10111
		21	4	5	7	6	23
	-5 (1011)	00000	00000	00001	00011	00010	00010
		0	0	1	3	2	2
		-5 (1011)	-3 (1101)	-1 (1111)	1 (0001)	3 (0011)	5 (0101)
	INPHASE VALUE						

FIG. 14



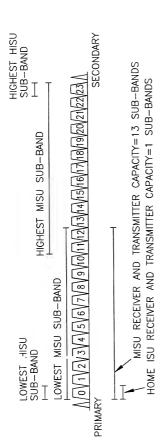


FIG. 16

5 PAYLOAD CHANNELS + 1 IOC CHANNEL + 5 PAYLOAD CHANNELS (24 SUB-BANDS)

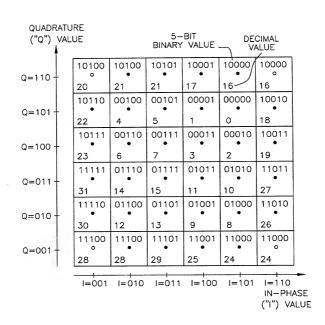


FIG. 17

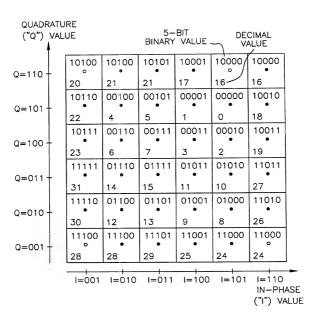
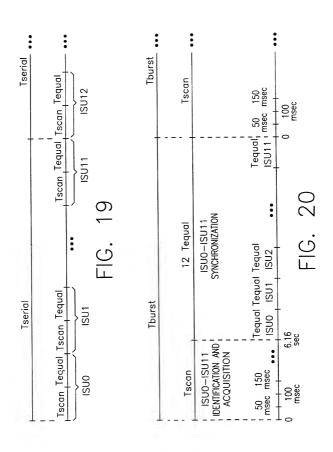
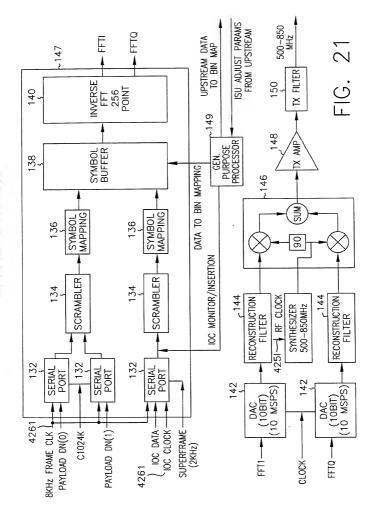


FIG. 18





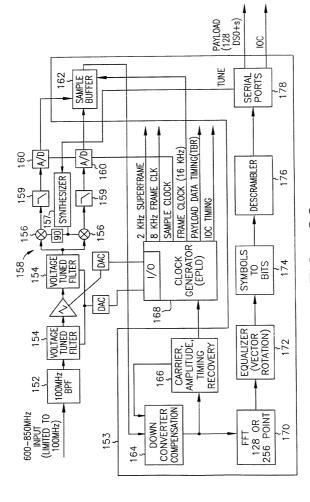


FIG. 22

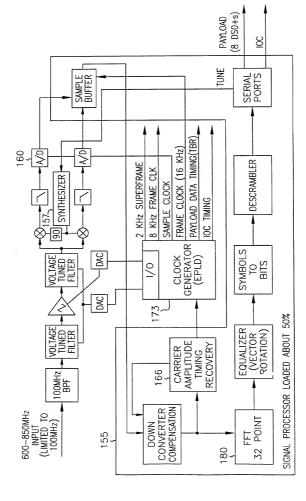
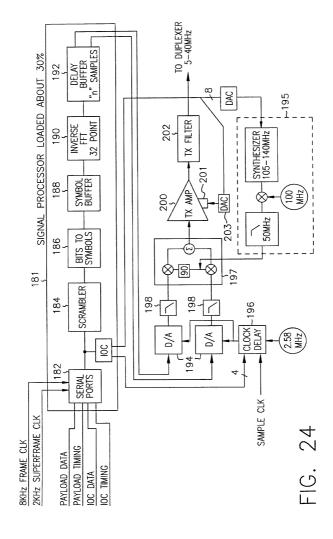
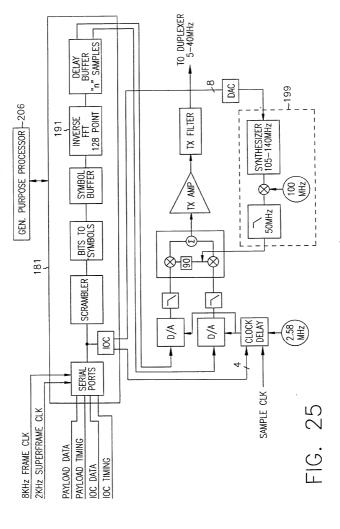
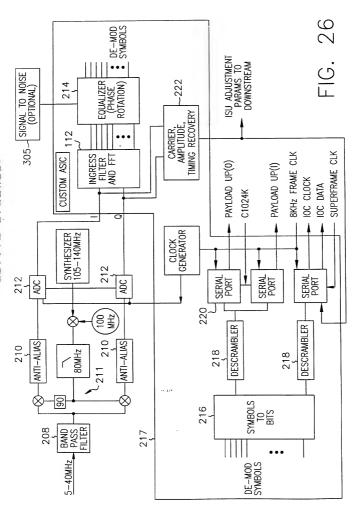


FIG. 23







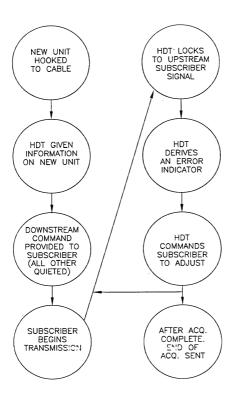


FIG. 27

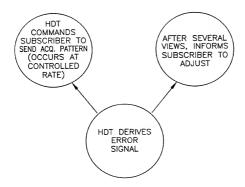


FIG. 28

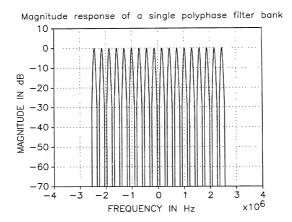


FIG. 29

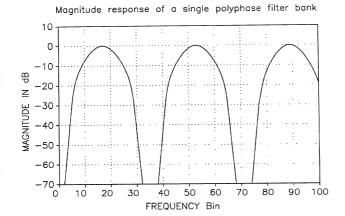
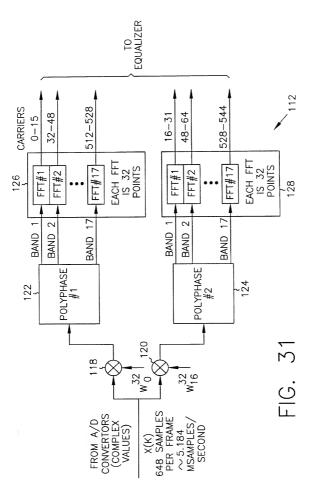
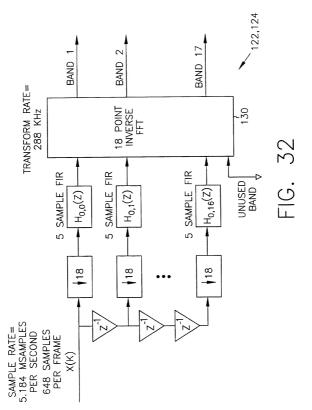
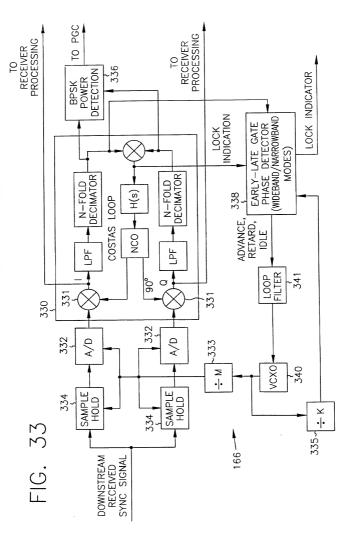
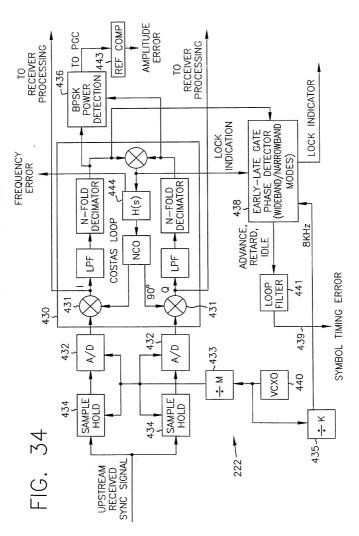


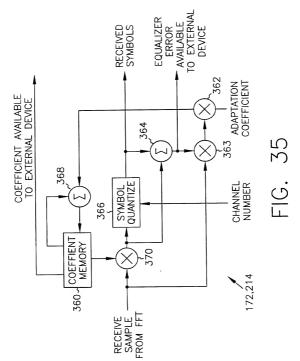
FIG. 30

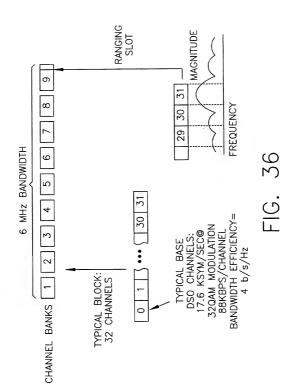


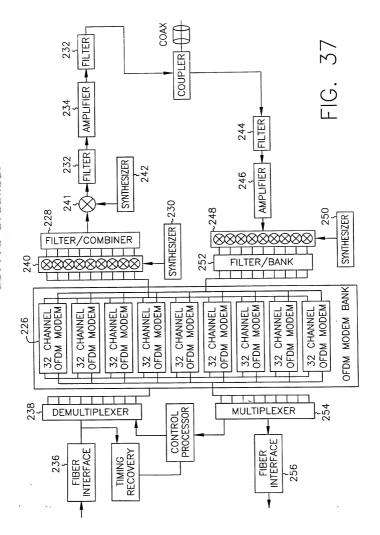


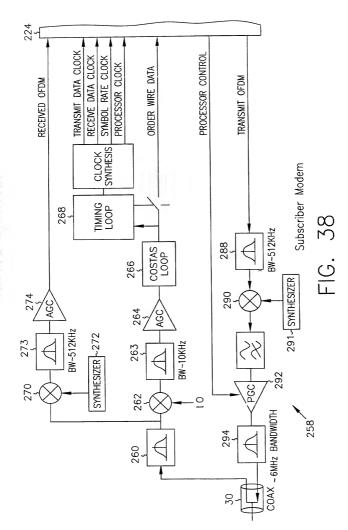












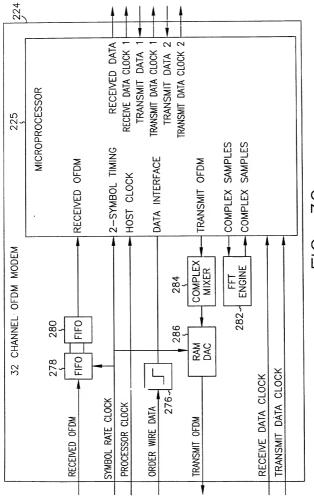


FIG. 39

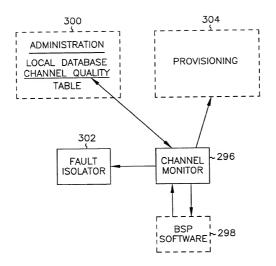
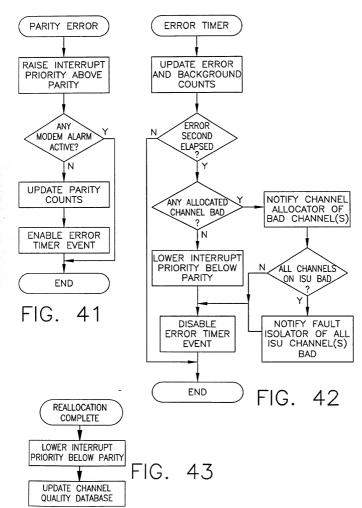
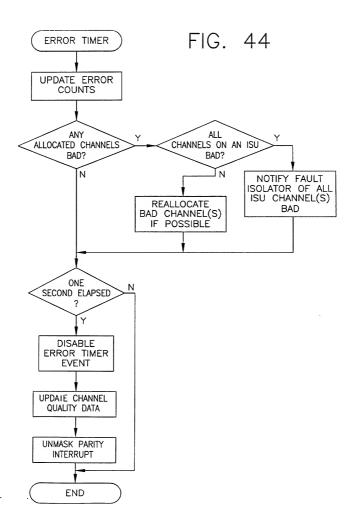
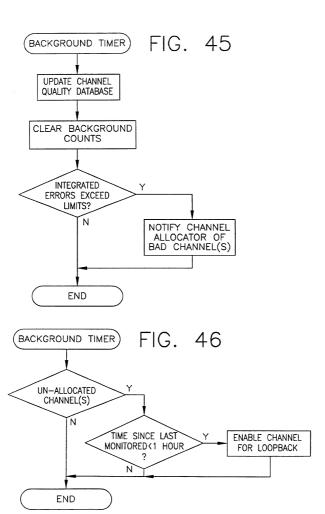


FIG. 40







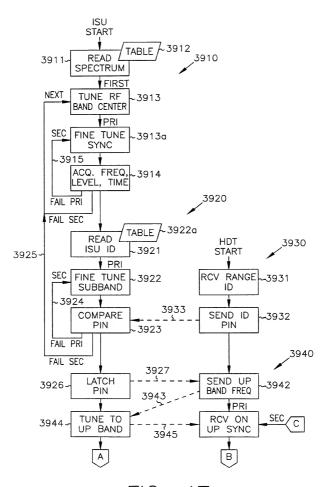
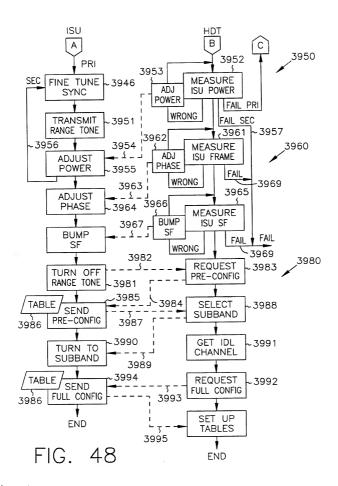


FIG. 47



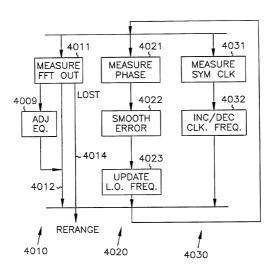


FIG. 49

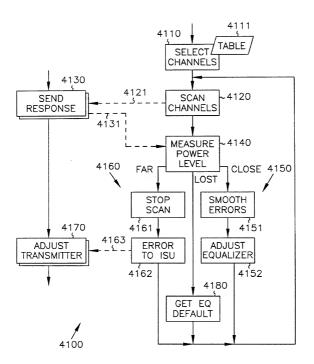
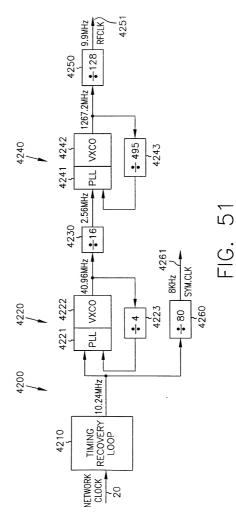


FIG. 50



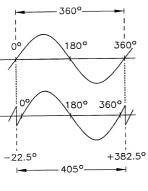


FIG. 52

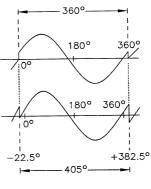
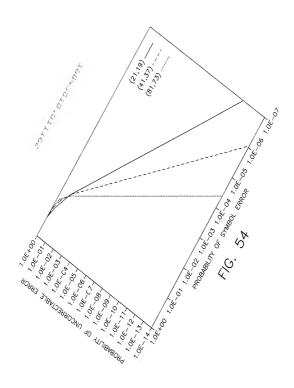


FIG. 53



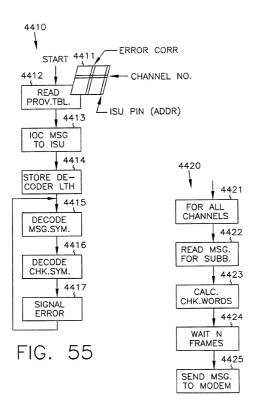


FIG. 56

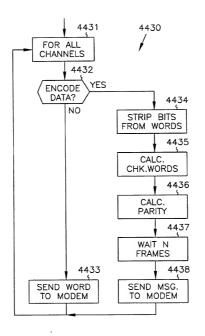
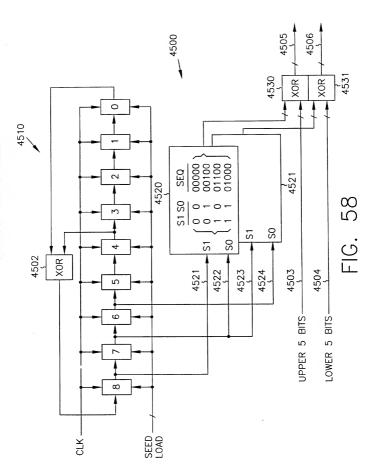


FIG. 57



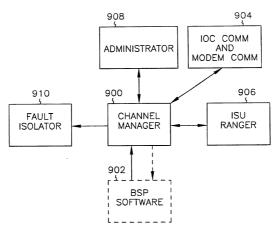
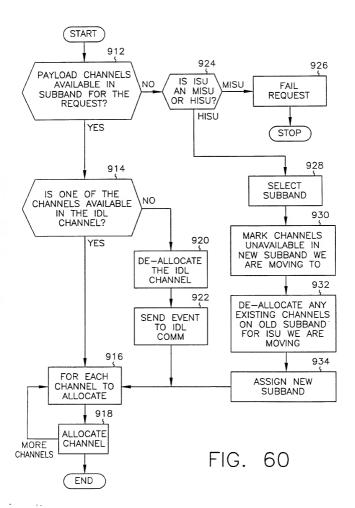


FIG. 59



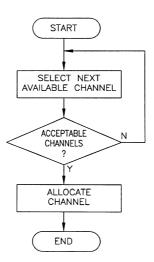


FIG. 61

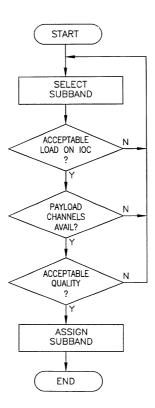


FIG. 62

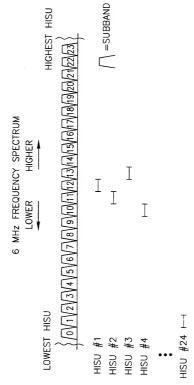


FIG. 63

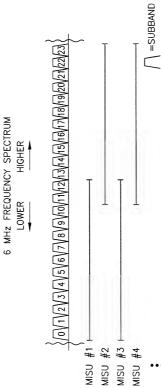
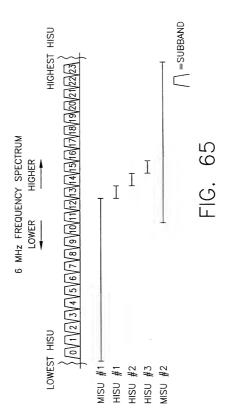
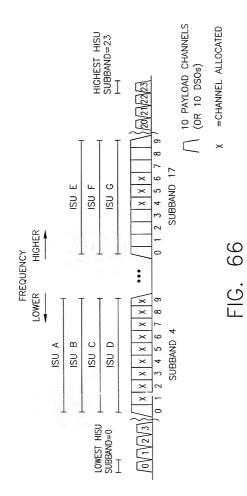
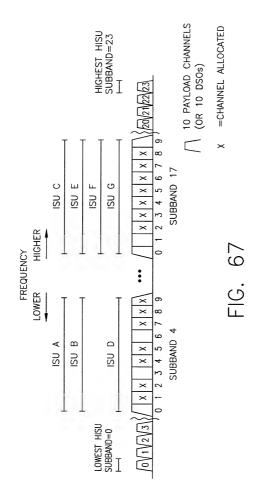


FIG. 64







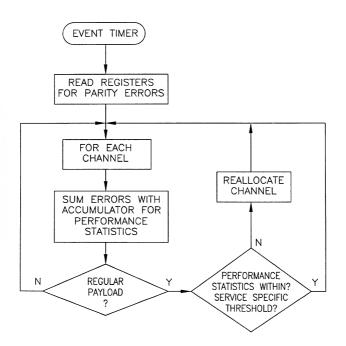


FIG. 68

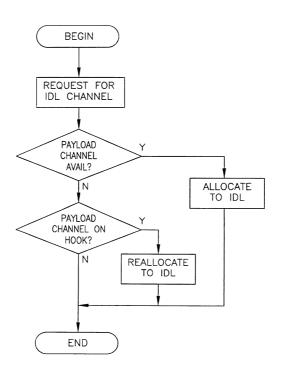
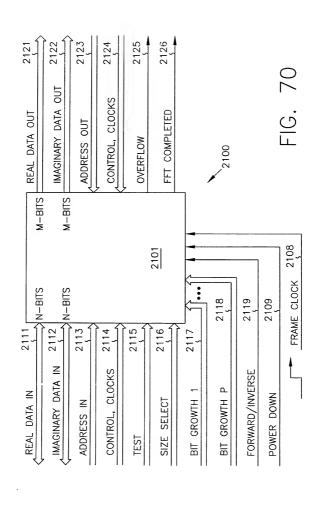


FIG. 69



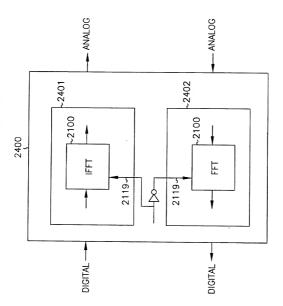
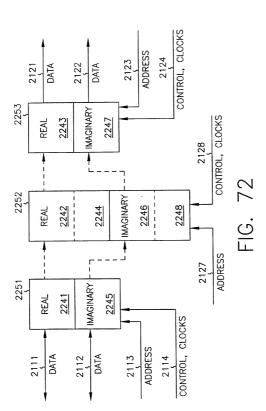
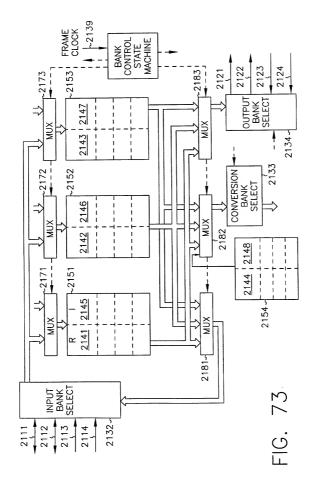
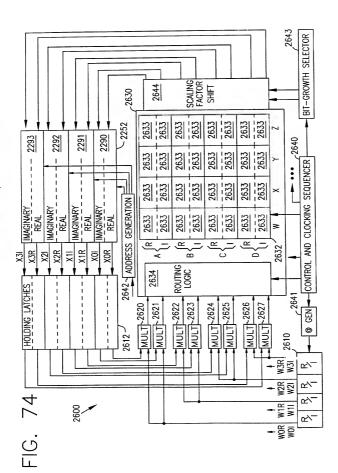


FIG. 71





---



## 

THIS TABLE SHOWS THE ORDER OF CALCULATION FOR A TRANSPOSED BUTTERFLY:

0	
( )	
$\overline{}$	

	, 2800		7.5
~2632	1		Ę
AZR =ZR	BZR=ZR	CZR=ZR	DZR=ZR
AZI =ZI	BZI =ZI	CZI =ZI	DZI =ZI
AYR =YR	BYR=YR	CYR=YR	DYR=YR
AYI =YI	BYI =YI	CYI=YI	DYI =YI
AXR = XR	BXR=XR	CXR = XR	DXR=XR
AXI = XI	BXI =XI	CXI = XI	DXI =XI
AWR=WR	BWR=WR	CWR=WR	DWR=WR
AWI =WI	BWI =WI	CWI =WI	DWI =WI

ರ

	2800		76
~2632			FIG
AZR=AZR –ZI	BZR=BZR -ZI	CZR=CZR -ZI	DZR=DZR –ZI
AZI=AZI +ZR	BZI=BZI +ZR	CZI=CZI +ZR	DZI=DZI +ZR
AYR=AYR -YI	BYR=BYR -YI	CYR=CYR -YI	DYR=DYR -YI
AYI=AYI +YR	BYI=BYI +YR	CYI=CYI +YR	DYI=DYI +YR
AXR=AXR -XI	BXR=BXR -XI	CXR=CXR -XI	DXR=DXR -XI
AXI=AXI +XR	BXI=BXI +XR	CXI=CXI +XR	DXI=DXI +XR
AWR=AWR -WI	BWR=BWR-WI	CWR=CWR-WI	DWR=DWR-WI
AWI=AWI +WR	BWI=BWI +WR	CWI=CWI +WR	DWI=DWI +WR

1	~2632	2800		FIG 77	
	AZR=AZR –ZI AZI=AZI +ZR	BZR=BZR -ZI BZI=BZI +ZR	CZR=CZR –ZI CZI=CZI +ZR	DZR=DZR –ZI DZI=DZI +ZR	
	AYR=AYR -YR AYI=AYI -YI	BYR=BYR -YR BYI=BYI -YI	CYR=CYR -YR CYI=CYI -YI	DYR=DYR -YR DYI=DYI -YI	
	AWR=AWR +WR AXR=AXR +XI AWI=AWI +WI AXI=AXI -XR	BXR=BXR +XI BXI=BXI -XR	CXR=CXR +XI CXI=CXI -XR	DXR=DXR +XI DXI=DXI -XR	
C2	AWR=AWR +WR AWI=AWI +WI	BWR=BWR+WR BWI=BWI +WI	CWR=CWR+WR CWI=CWI +WI	DWR=DWR+WR DWI=DWI +WI	

F.G. /X	170-170		ואן ואט=ואט	DWI=DWI +WR
1	DZR=DZR -ZR	DYR=DYR +YI	DXR=DXR +XR	DWR=DWR-WI
	CZR=CZR –ZR	CYR=CYR +YI	CXR=CXR +XR	CWR=CWR-WI
	CZI=CZI –ZI	CYI=CYI -YR	CXI=CXI +XI	CWI=CWI +WR
2800	BZR=BZR –ZR	BYR=BYR +YI	BXR=BXR +XR	BWR=BWR-WI
	BZI=BZI –ZI	BYI=BYI -YR	BXI=BXI +XI	BWI=BWI +WR
~2632	AZR=AZR –ZR	AYR=AYR +YI	AXR=AXR +XR	AWR=AWR -WI
	AZI=AZI –ZI	AYI=AYI -YR	AXI=AXI +XI	AWI=AWI +WR

C3

## 

	-2632	2800		FIG 79	
	AYR=AYR +YR AZR=AZR -ZR ~2632 AYI=AYI +YI AZI=AZI -ZI	BZR=BZR –ZR BZI=BZI –ZI	CZR=CZR –ZR CZI=CZI –ZI	DZR=DZR –ZR DZI=DZI –ZI	
	AYR=AYR +YR AYI=AYI +YI	BYR=BYR +YR BYI=BYI +YI	CXR=CXR - XR CYR=CYR + YR CZR=CZR - ZR CXI=CXI - XI CYI=CYI + YI CZI=CZI - ZI	DYR=DYR +YR DYI=DYI +YI	
	AXR=AXR -XR AXI=AXI -XI	BXR=BXR -XR BXI=BXI -XI	CXR=CXR -XR CXI=CXI -XI	DXR=DXR -XR DXI=DXI -XI	
† 5	AWR=AWR +WR AWI=AWI +WI	BWR=BWR+WR BWI=BWI +WI	CWR=CWR+WR CWI=CWI +WI	DWR=DWR+WR DWI=DWI +WI	

	~2632	2800		FIG 80
	AYR=AYR -YI AZR=AZR +ZI ~Z	BZR=BZR +ZI	CZR=CZR +ZI	DZR=DZR +ZI
	AYI=AYI +YR AZI=AZI -ZR	BZI=BZI –ZR	CZI=CZI –ZR	DZI=DZI –ZR
	AYR=AYR -YI AYI=AYI +YR	BYR=BYR -YI BYI=BYI +YR	CYR=CYR -YI CZR=CZR +ZI CYI=CYI +YR CZI=CZI -ZR	DYR=DYR -YI DYI=DYI +YR
	AXR=AXR +XI	BXR=BXR +XI	CXR=CXR +XI	DXR=DXR +XI
	AXI=AXI -XR	BXI=BXI -XR	CXI=CXI -XR	DXI=DXI -XR
C5	AWR=AWR-WI	BWR=BWR-WI	CWR=CWR-WI	DWR=DWR-WI
	AWI=A\'I  +WR	BWI=BWI +WR	CWI=CWI +WR	DWI=DWI +WR

	7 2800		$\propto$	-		7 2800		82
~2632	7		FIG 81	<u>)</u> -	~2632	4		FIG. 82
AZR=AZR +ZI	BZR=BZR +ZI	CZR=CZR +ZI	DZR=DZR +ZI		AZR=AZR –ZR	BZR=BZR –ZR	CZR=CZR –ZR	DZR=DZR –ZR
AZI=AZI –ZR	BZI=BZI –ZR	CZI=CZI –ZR	DZI=DZI –ZR		AZI=AZI +ZI	BZI=BZI +ZI	CZI=CZI +ZI	DZI=DZI +ZI
AYR=AYR -YR	BYR=BYR -YR	CYR=CYR -YR	DYR=DYR -YR		AYR=AYR +YI	BYR=BYR +YI	CYR=CYR +YI	DYR=DYR +YI
AYI=AYI -YI	BYI=BYI -YI	CYI=CYI -YI	DYI=DYI -YI		AYI=AYI –YR	BYI=BYI -YR	CYI=CYI -YR	DYI=DYI -YR
AXR=AXR -XI	BXR=BXR -XI	CXR=CXR -XI	DXR=DXR -XI		AXR=AXR -XR	BXR=BXR -XR	CXR=CXR -XR	DXR=DXR -XR
AXI=AXI +XR	BXI=BXI +XR	CXI=CXI +XR	DXI=DXI +XR		AXI=AXI -XI	BXI=BXI -XI	CXI=CXI -XI	DXI=DXI -XI
AWR=AWR +WR	BWR=BWR+WR	CWR=CWR+WR	DWR=DWR+WR	C7	AWR=A VR -WI	BWR=BWR-WI	CWR=CWR-WI	DWR=DWR-WI
AWI=AWI +WI	BWI=BWI +WI	CWI=CWI +WI	DWI=DWI +WI		AWI=AWI +WR	BWI=BWI +WR	CWI=CWI +WR	DWI=DWI +WR

2632 THIS TABLE SHOWS THE ORDER OF CALCULATION FOR A TRANSPOSED BUTTERFLY:

00			102	_
AWR =WR+XR+YR+ZR AWI =WI+XI+YI+ZI	AXR =WR-XI-YR+ZI AXI =WI+XR-YI-ZR	AYR =WR-XR+YR-ZR AYI =WI-XI+YI-ZI	AZR =WR+XI-YR-ZI AZI =WI-XR-YI+ZR	2810
	1	I	ı	\
	ı	-	1	
		1	1	
1	ı	ı	1	
	1	1	ı	
ı	ı	ı	ı	
			FIG. 83	33

2810  $\begin{array}{ll} AZR & = AZR - (WI - XR - YI + ZR) \\ AZI & = AZI + (WR + XI - YR - ZI) \end{array}$ 2632 ı AYR =AYR-(WI-XI+YI-ZI) AYI =AYI+(WR-XR+YR-ZR) ı ı AXR =AXR-(WI+XR-YI-ZR) AXI =AXI+(WR-XI-YR+7I) ı AWR =AWR-(WI+XI+YI+ZI) AWI =AWI+(WR+XR+YR+ZR)  $\overline{c}$ ۱

FIG. 84

١

1 1 1

1 1 1 1

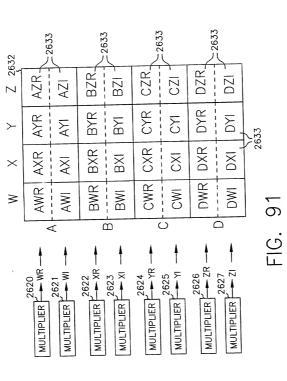
1 1 1 1

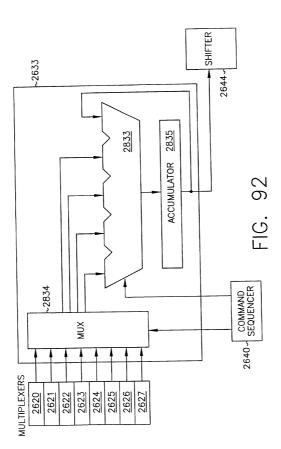
1 1 1

C2			, 2632	
			ı	0810
ı	1			2
BWR =WR+XR+YR+ZR BWI =WI+XI+YI+ZI	BXR =WR-XI-YR+ZI BXI =WI+XR-YI-ZR	BYR =WR-XR+YR-ZR BYI =WI-XI+YI-ZI	BZR =WR+XI-YR-ZI BZI =WI-XR-YI+ZR	
1		-	1	
1	ı	1		
	1		1	
ı <b>!</b>	ı	ı		
			FIG. 85	35
			, 2632	_
		-	ſ	2810
ı	ı	ı	-	2 7
BWR =BWR-(WI+XI+YI+ZI) BWI =BWI+(WR+XR+YR+ZR)	BXR =BXR-(WI+XR-YI-ZR) BXI =BXI+(WR-XI-YR+ZI)	BYR =BYR-(WI-XI+YI-ZI) BYI =BYI+(WR-XR+YR-ZR)	BZR =BZR-(WI-XR-YI+ZR) BZI =BZI+(WR+XI-YR-ZI)	•
	_	1	1	
1	ı	_	1	
	_	ı	1	
1	1	1	1	
			FIG. 86	36

XR =WR-XI-YR-ZI XI =WR-XI-YR-ZI CYR =WR-XI+YR-ZI CYR =WR-XI+YR-ZI CYR =WR-XI-YR-ZI CZI = WR-XI-YR-ZI CZI = WR-XI-YR-ZI CZI = WR-XI-YR-ZI CZI = CZI - WR-XR-YI-ZR) CZI = CZI - (WI-XR-YI-ZR) CZI = CZI - (WI-XR-YI-YR-ZI) CZI = CZI - (WI-XR-YI-ZR) CZI = CZI - (WI-XR-YI-YR-ZI) CZI = CZI - (WI-XR-YI-ZR) CZI - CZI - (WI-XR-YI-ZR) CZI - CZI - (WI-XR-YI-ZR) CZI - C					0
CXR =WR-XI-YR+ZI CYR =WR-XR+YR-ZR CZR =WR+XI-YR-ZI CXI =WI-XR-YI+ZR CXI =WI-XR-YI+ZR CXI =WI-XR-YI+ZR CXI =WI-XR-YI+ZR CXI =WI-XR-YI+ZR CXI =WI-XR-YI+ZR CXI =WI-XR-YI-ZR CXI =WI-XR-YI-ZR CXI =WI-XR-YI-ZR CXI =CXI+(WR-XI-YR-ZI) CYI =CYI+(WR-XI-YR-ZI) CYI =CXI+(WR-XI-YR-ZI) CYI =CYI+(WR-XI-YR-ZI) CYI =CYI+(WR-XI-YR-ZI) CYI =CXI-(WR-XI-YR-ZI) CYI =CXI-(WR-XI-YR-ZI) CYI =CYI+(WR-XI-YR-ZI) CYI =CXI-(WR-XI-YR-ZI) CY		1 1	1 1		2810
CXR = WR-XI - YR-ZI		1	1	1	•
CXR = WR-XI-YR+ZI					
- FIG. 8  - CXR = CXR - (WR - XR - YR - ZR)  - CXR = CXR + (WR - XR - YR - ZR)  - CXR = CXR + (WR - XR - YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR = CXR + (WR - XR + YR - ZR)  - CXR + CXR + (WR - XR + YR - ZR)  - CXR + CXR + (WR - XR + YR - ZR)  - CXR + CXR + (WR - XR + YR - ZR)	:+XR+YR+ZR +XI+YI+ZI	CXR =WR-XI-YR+ZI CXI =WI+XR-YI-ZR		CZR =WR+XI-YR-ZI CZI =WI-XR-YI+ZR	
- FIG. 8    -   -   -    FIG. 8    -   -      -    -   -   -    -   -		-	1	1	
FIG. 8		1		-	
				.2632	
		ı	1	ı	2810
CXR =CXR-(WH-XR-YI-ZR) CYR =CYR-(WI-XI+YI-ZI) CXI =CXI+(WR-XI-YR+ZI) CYI =CYI+(WR-XR+YR-ZR)		ı		-	`
CXR =CXR-(WH-XR-YI-ZR) CYR =CYR-(WI-XI+YI-ZI) CXI =CXI+(WR-XI-YR+ZI) CYI =CYI+(WR-XR+YR-ZR)			1	1	
CXR =CXR-(WR+XR-YI-ZR) CYR =CYR-(WI-XI+YI-ZI) CXI =CXI+(WR-XI-YR+ZI) CYI =CYI+(WR-XR+YR-ZR)		1	ı	-	
1 1	NR-(WI+XI+YI+ZI) MI+(WR+XR+YR+ZR)	CXR =CXR-(WI+XR-YI-ZR) CXI =CXI+(WR-XI-YR+ZI)	$\begin{array}{ll} CYR = CYR - (WI - XI + YI - ZI) \\ CYI = CYI + (WR - XR + YR - ZR) \end{array}$	CZR =CZR-(WI-XR-Y1+ZR) CZI =CZ1+(WR+XI-YR-ZI)	
-			l	1	
		1	-	-	

C6			2632 	2810
	-   -   -   -   -   -   -   -   -   -			2810
UWI = DWI+(WK+AKTIKTEN		_	FIG. 90	90





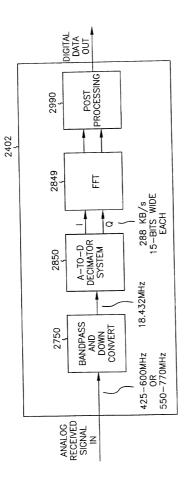


FIG. 93

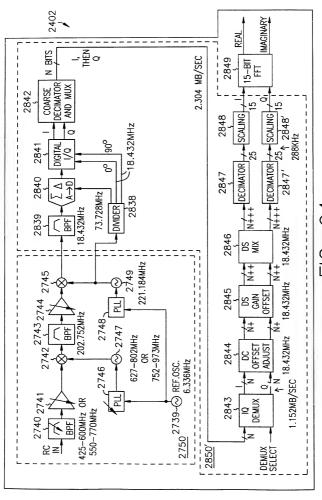
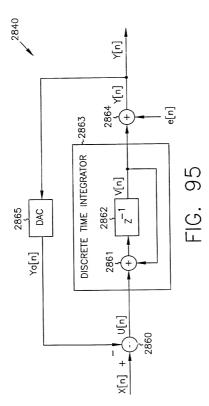
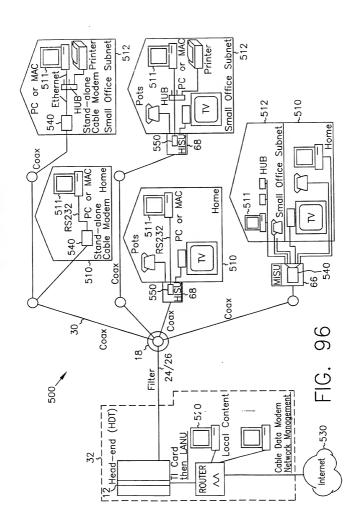


FIG. 94





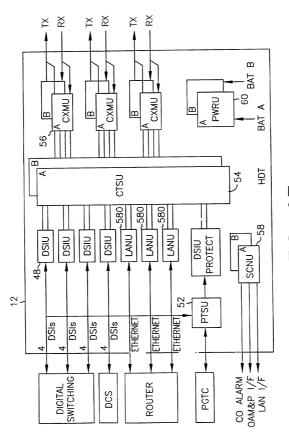
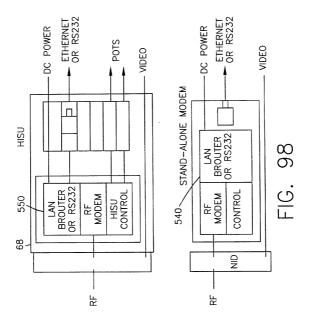
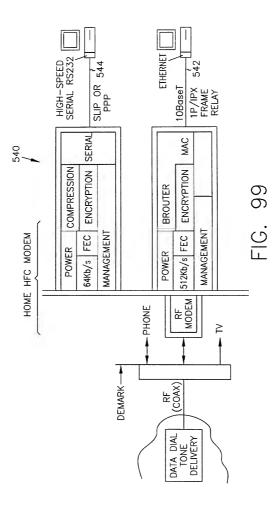


FIG. 97

\_





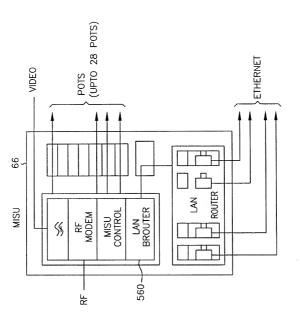


FIG. 100

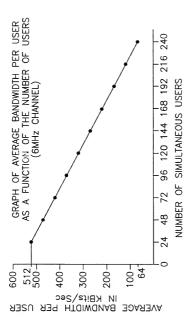
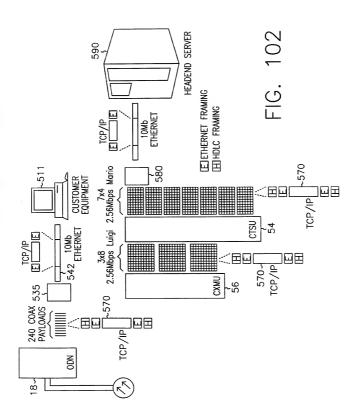
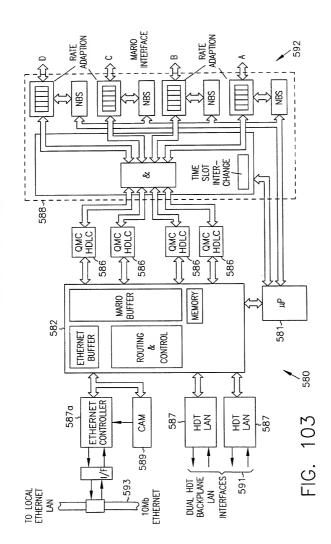
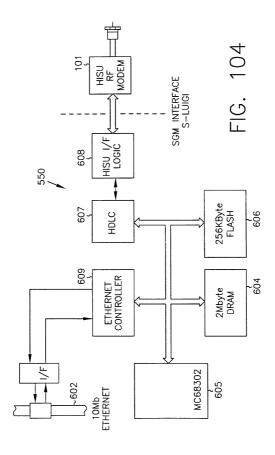
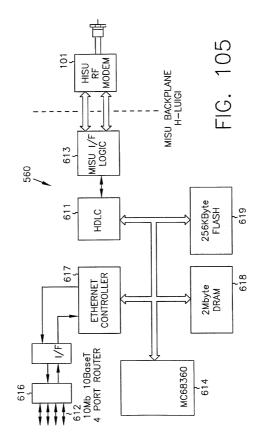


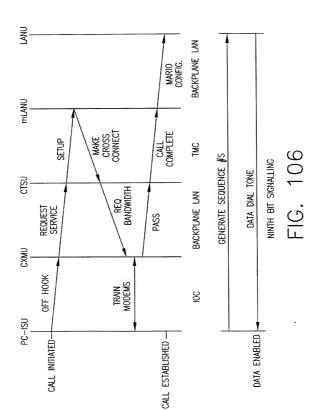
FIG. 101

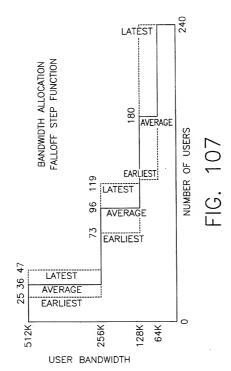












## 

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 2 1 | 22 | 23 | 445 | ADDING THE 25th USER ETC ADDING THE 26th USER,

FIG. 108

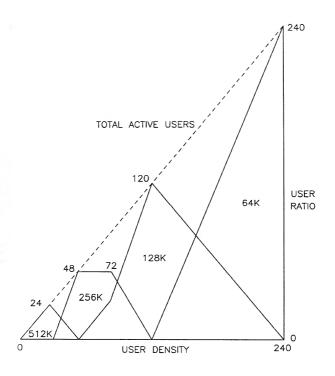


FIG. 109

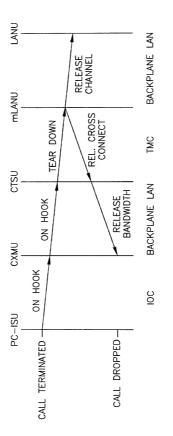
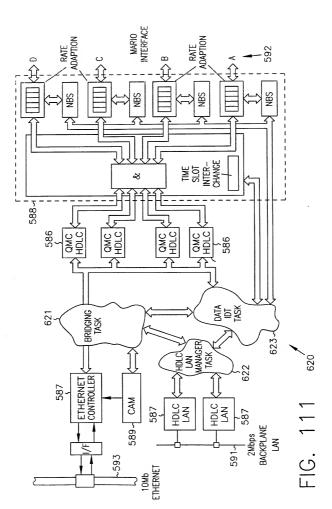


FIG. 110



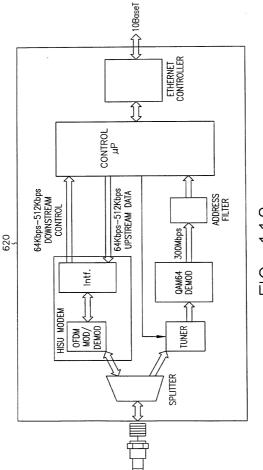


FIG. 112

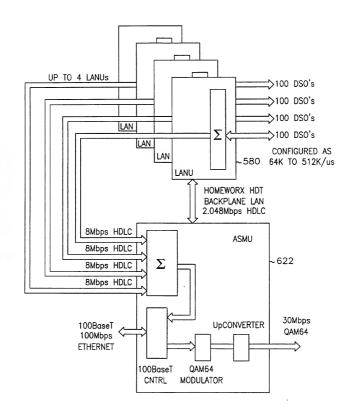
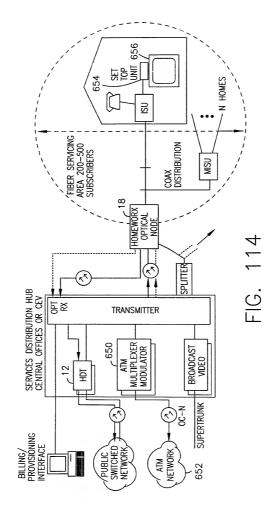
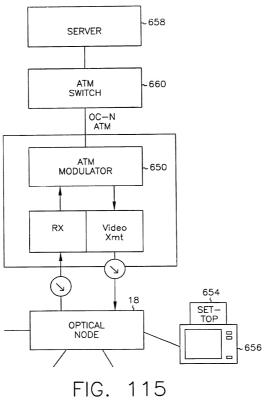
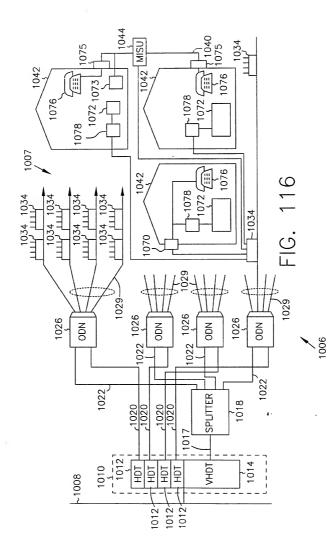
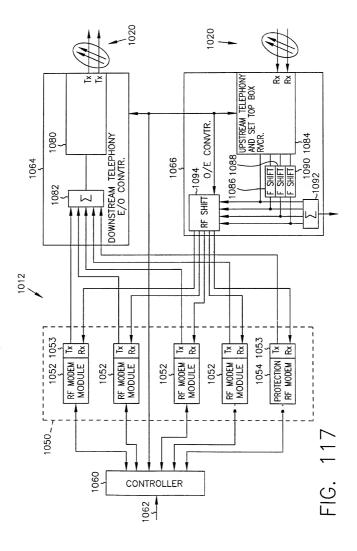


FIG. 113









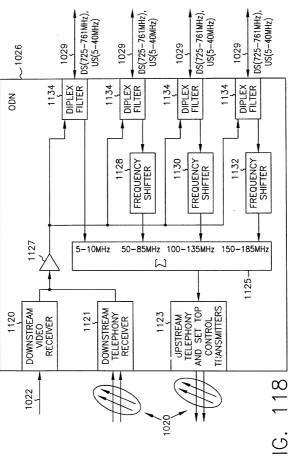


FIG. 118

